ROANOKE COUNTY COMMUNITY DEVELOPMENT
COMMERCIAL FIRE SPRINKLER SYSTEM SUBMITTAL CHECKLIST

Project Name:_____ **Date:**_____

Occupancy Address:_____

Owner:_____**Telephone:**_____

Occupant/Tenant:_____ **Telephone:**_____

Owner's Address:_____

Designer: (print)_____ **Signature** _____

Address:_____

Telephone:_____ **Fax:**_____ **Email:**_____

This checklist is to accompany <u>all</u> plan submittals. Three complete sets of drawings, scaled to 1/8" or 1/4" per foot.[2] Included with the submittal must be a graph sheet, plotted on semi-logarithmic graph paper, showing water supply curves and system requirements. Design, layout, and installation is to be done in accordance with the current edition of the Uniform Statewide Building Code and all adopted standards.* Information on shop drawings should include all of the following applicable items:

1. __ Dimensioned site plan showing entire building and indicating area served by system.
2. __ Point of compass (i.e. direction of north)
3. __ Ceiling construction
4. __ Full height cross section
5. __ Location of all fire walls and partitions
6. __ Complete floor plan indicating occupancy of each room or area
7. __ Any questionable spaces, e.g. concealed spaces, etc., where no sprinklers are installed
8. __ Size of water main in street[3]
9. __ Alternate/Additional water supply showing pressure and elevation[3]
10. __ Make, type, and nominal orifice size of all sprinklers
11. __ Temperature rating and location of any high-temperature sprinklers
12. __ Number of sprinklers on each riser and on each system by floors and total area by each system on each floor
13. __ Type and location of alarm bell and supervisory method
14. __ Pipe material and schedule to be used
15. __ Type and location of hangers, sleeves, braces and methods of securing sprinklers[1]
16. __ Underground pipe size, length, location, weight, material, point of connection to main, type of valves, meters, valve pits, and depth to top of pipe
17. __ When the equipment is installed as an addition to an existing system, enough of existing system shall be indicated on plans to make all corrections clear and indicate

the effect, if any, on existing remote areas
18. __ Name, address, and phone number of contractor
19. __ Hydraulic reference points are to be shown by a number and/or letter designation
20. __ System design criteria showing the minimum rate of water application (density), the design area of water application and the water required for hose streams both inside and outside
21. __ FDC location(s) in accordance with approved civil drawings; please verify with the Roanoke County Fire Marshal's Office prior to submittal

Information on calculations should include all of the following applicable items:

1. __ Location, name of owner/occupant, name of designer and address, and building identification
2. __ Description of hazardΔ
3. __ Hazard/Commodity classificationΔ
4. __ Design area of water application
5. __ Minimum rate of water application i.e., density
6. __ Area of sprinkler coverage
7. __ Building height
8. __ Storage height
9. __ Storage method
10. __ Total water requirements, as calculated, including allowance for hose demand water supply information
11. __ Location and elevation of static and residual test gauge with relation to the riser reference point
12. __ Water supply data including date, size, and location of main and recent supply test flow data indicating flow, static, residual pressure, and whom test was conducted by
13. __ If design is a gridded system, sketch must be attached to indicate flow quantities and directions for lines with sprinklers operated in the remote area
14. __ Sprinkler description and discharge constant (K value)
15. __ Hydraulic reference points
16. __ Flow, gpm
17. __ Pipe diameter (actual) and length
18. __ Equivalent pipe length for fittings and components
19. __ Friction loss in psi per foot of pipe and total friction loss between reference points
20. __ Elevation difference between reference points
21. __ Required pressure in psi at each reference point
22. __ Velocity pressures and normal pressure if included in calculations

[1]Piping hanging supports in areas with a seismic design category of other than A or B must be reviewed and approved by the registered design professional in accordance with IBC section 1621 and ASCE 7, section 9.6.

[2]Fire protection system design is considered engineering work and must be done under the supervision of the design professional of record, where applicable with State Law. Sprinkler shop drawings must first be submitted to the design professional, where applicable and stamped "approved" prior to submittal to our office. For more information please see the SFPE Position Statement; *The Role of the Engineer and the Technician Designing Fire Protection Systems* at
http://www.sfpe.org/upload/sfpe_position_statement_october_2005_001.pdf

[3]The design of an adequate water supply, i.e., fire pump, storage tank, etc., must be conducted by a registered design professional with an adequate knowledge and understanding of fluid mechanics, hydraulics, and the appropriate codes and standards.

∆ If the occupancy is other than light, or ordinary hazard (group 1), the applicable attached letters indicating the owner's intended use must be included with submittal. Due to the complexity of some hazards, an engineering analysis of hazards and storage methods, conducted by a registered design professional, may be required at the discretion of this office.

*Currently adopted edition of applicable standards for general design/installation:

- *International Building Code 2003*
- NFPA 13-1999
- NFPA 13R-1999
- NFPA 20-1999